IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : July 7, 2005

Nimrod Megiddo

Group Art Unit: 3624 : Examiner: Charles R. Kyle

Serial No.: 09/753,556 : Filed: 1/4/2001

Attorney Docket: ARC9-2000-0138-US1 : Confirmation No.: 1847

Title: **SYSTEM, METHOD AND PROGRAM PRODUCT FOR IMPROVING BROKER'S PROFITS IN ELECTRONIC COMMERCE**

RULE 131 DECLARATION

Commissioner for Patents
Alexandria, VA 22313

Sir:

I, Nimrod Megiddo, do hereby declare unequivocally as follows:

1. I am the inventor of the invention described and claimed in this patent application, which I have assigned to my employer, the IBM Corporation. The subject matter and the claimed invention in this patent application were, at the time the invention was made, owned by the IBM Corporation or subject to an obligation of assignment to the IBM Corporation.

2. I originally submitted the attached disclosure describing this invention on 3/24/2000 using IBM's time-stamped invention disclosure database system for evaluation by IBM's IP Law staff.

3. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

July 7, 2005
San Jose, CA

Nimrod Megiddo
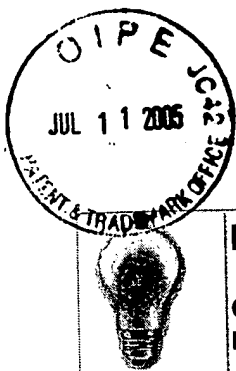
Disclosure ARC8-2000-0122

Created By: Nimrod Megiddo   **Created On:** 03/23/2000 06:37:08 PM
Last Modified By: Cheryl Ruby   **Last Modified On:** 05/16/2000 09:05:45 AM

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Required fields are marked with the asterisk (*) and must be filled in to complete the form .

Summary

Status	Under Evaluation
Processing Location	ARC
Functional Area	DPB - Computer Science - (A.K. Chandra)
Attorney/Patent Professional	Marc D McSwain/Almaden/IBM
IDT Team	Marc D McSwain/Almaden/IBM; Cheryl Ruby/Almaden/IBM
Submitted Date	03/24/2000 01:06:10 AM
Owning Division [Select]	
	To calculate a PVT score, use the 'Calculate PVT' button.
Incentive Program	
Lab	
Technology Code	

Inventors with Lotus Notes IDs

Inventors: Nimrod Megiddo/Almaden/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
> Megiddo, Nimrod	645231	22/K53D	329461	Fagin, Ronald

Inventors without Lotus Notes IDs

IDT Selection

IDT Team: Marc D McSwain/Almaden/IBM Cheryl Ruby/Almaden/IBM	Attorney/Patent Professional: Marc D McSwain/Almaden/IBM

Response Due to IP&L : 06/15/2000

Main Idea

*Title of disclosure (in English)
System and method for improving brokers' profits in electronic commerce

*Idea of disclosure
1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.
    The function of a broker is to help buyers find adequate sellers or service providers for their specific needs and help sellers and service providers find interested buyers. Often a broker representing buyers interacts with another broker representing sellers and these brokers may

themselves interact through one or more brokers. Brokers typically add informational value to buyers and better liquidity for sellers. In other words, buyers benefit from the help of brokers that identify for them a larger variety of suppliers and sellers benefit in the way that brokers find for them more buyers for quicker sales at better prices. Naturally, brokers work for profit which they would like to maximize.

With the development of the Internet and electronic commerce software, buyers and sellers can find each other more easily, so some brokers may lose business. However, in many areas of commerce sellers are reluctant to post prices and prefer to enter deals with buyers subject to price and terms negotiations. In many cases, at least one of the parties may wish to remain anonymous. Therefore, the role of brokers remains essential.

Another new development due to electronic commerce is that negotiations can be carried out by computerized "agents" and hence much more quickly than before. The implications are far reaching since the duration of the negotiation phase become less essential than in traditional personal negotiations. Computer agents can exchange a large number of offers and counter-offers, whereas human negotiators typically drop the matter if after a few rounds of offers they do not reach agreement.

Brokers can make profit in several ways. One is by getting a commission that is equal to a fixed percentage of the deal value. In this case the objective of the broker is to maximize the product of the anticipated deal value times the probability of the deal carried out. Another way of the broker to profit is to negotiate with the two sides and maximize the gap between the buyer price and the seller price. Thus, if the broker persuades the seller to sell at x and the buyer to pay y ($y > x$), then the broker can pocket the amount of $y-x$. Obviously, the broker would like to maximize the latter subject to reaching an agreement.

Thus, there is clear need for an improvement in the way brokers conduct their negotiations in order to increase profits.

With regard to prior art, I found the following patents which do not seem to cover the invention disclosed here.

US5995947: Interactive mortgage and loan information and real-time trading system

Abstract:

The invention provides a method and system for trading loans in real time by making loan applications, such as home mortgage loan applications, and placing them up for bid by a plurality of potential lenders. A transaction server maintains a database of pending loan applications and their statuses; each party to the loan can search and modify that database consistent with their role in the transaction, by requests to the server from a client device identified with their role. Brokers at a broker station can add loan applications, can review the status of loan applications entered by that broker, are notified of lender's bids on their loans, and can accept bids by lenders. Lenders at a lender station can search the database for particular desired types of loans, can sort selected loans by particular desired criteria, can bid on loan applications, and are notified when their bids are accepted. Broker stations, lender stations, and the transaction server can be coupled using multiple access methods, including internet, intranet, or dial-up or leased communication lines.

US5592375: Computer-assisted system for interactively brokering goods or services between buyers and sellers

Abstract: A computer-implemented system for brokering transactions between sellers and a buyer
of
goods or services, including a database, a seller interface, and a buyer's interface.
The
database contains information, including multimedia information, descriptive of
respective
ones of the goods or services. The seller interface enables the sellers to interactively
enter
information, including multimedia information, into the database. The buyer's
interface
provides a knowledge-based interactive protocol, enabling the buyer to select and
review the
descriptive information from the database, and makes perceptible the multimedia
information
in response to an interactive buyer request.

The independent claims recite

1. "A computer-implemented system for assisting an employer's hiring decision from among a pool of candidates,..."

9. "A computer-implemented method for interactively assisting an employer's hiring decision from among a pool of available candidates..."

2. How does the invention solve the problem or achieve an advantage,(a description of "the invention", including figures inline as appropriate)?
The invention is a computer system and a method for negotiating on the broker's behalf between a prospective buyer and prospective seller, exploring possible terms of the deal so as to maximize the gap between the prices acceptable to the two parties.

The roles of the broker begins when either a buyer or a seller asks the broker's help. The broker then identifies potential parties (i.e., a seller that may supply the buyer's need, or a buyer that may buy what the seller has to offer). I will describe the invention for the case of a buyer asking the broker's help. The case of a seller asking the broker's help will be apparent from this case as well.

When the buyer asks the broker's help, the broker attempts to obtain from the buyer the maximum prices the buyer may be willing to pay for various combinations of terms of the deal. This is done by asking the buyer to fill out some forms (possibly on-line) indicating preferences and price ranges. For example, the terms of the deal may include as in the following example. Suppose the buyer wishes to buy 10 trucks. The terms may include acceptable models, options, financing terms, delivery times, and warranty contracts. Based on the forms filled out by the buyer, including follow up questions, the broker calculates a mathematical model of the buyer's utility function with respect to the various terms. For example, a regression model may determine the value the buyer attaches to early delivery as a function of the number of days. Similarly, the broker attempts to figure out the buyer's valuation of warranties. If the buyer is an institution that already has an e-commerce site and has an automatic negotiator, the broker attempts to extract such information by interacting with buyer's site. In an abstract form, if the parameters describing the terms of the deal are $x_1,...,x_n$, the broker develops the models as a function $B = B(x_1,...,x_n)$ which gives the price the buyer would pay if the terms of the deal are $x_1,..,..,x_n$. For example the deal is precisely for 10 trucks all of the same model and the terms are reflected by x_1, the number of days for

delivery, and x2, the number of months of warranty coverage, and x3 is 0 if the make is Ford and 1 if it is Toyota (and these are the only possible ones). The function B may be of the form $B(x1,x2,x3) = 250,000 + 50,000 x3 + 500 x2 - 1000 x1$, which means that the buyer is willing to pay 25,000 for a Ford, 30,000 for a Toyota, add \$50 per month of warranty per truck, and deduct 100 day for delayed delivery per truck.
The buyer may also restrict the acceptable values of x2 to be between 12 and 36, and x3 to be between 7 and 21.

The broker has a knowledge base of potential suppliers, so based on buyer's demand, the seller identifies suitable suppliers and negotiates with them accordingly. The broker develops for each potential supplier a mathematical model of the price $S = S(x1,...xn)$ at which the seller may be willing to sell when the terms of the deal are given by x1,....,xn. In the trucks example, one seller may be willing to sell a Ford for 24,500, a Toyota for 30,100, a month of warranty for \$60, and expedite delivery for a cost of 80 a day, i.e. $S(x1,x2,x3) = 245000 + 56,000 x3 + 600 x2 - 800 x1$. Furthermore, the seller may restrict x2 to be between 0 and 24, and x1 to be between 15 and 30. The broker can then propose to the parties (without them negotiating directly) a deal reflected by x1,x2,x3 such that $B(x1,x2,x3)-S(x1,x2,x3)$ is maximized subject to x3 being equal to either 0 or 1, $12 <= x2 <= 24$, and $7 <= x1 <= 15$. The broker actually solves this optimization problem.

When the broker identifies more than one potential seller, the broker constructs a function $S = S(x1,..xn)$ that reflects the possibility of splitting the order among several sellers, and maximizes his profit accordingly. The functions B and S do not necessarily have to be linear. Differen types of functions may be constructed for different markets.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.

*Critical Questions (Questions 1 - 7 must be answered)

*Question 1
On what date was the invention workable? 03/23/2000 **Please format the date as MM/DD/YYYY** (Workable means i.e. when you know that your design will solve the problem)

*Question 2 Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?	○ Yes ● No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	
Are you aware of any publications, products or patents that relate to this invention?	○ Yes ● No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	

| *Question 3 Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal? | ○ Yes ● No |
| Is a sale, use in manufacturing, product announcement, or proposal planned? | ○ Yes ● No |

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.

     Product:
Version/Release:
   Code Name:
       Date:
    To Whom:
If more than one, use cut and paste and append as necessary in the field provided.

| *Question 4 Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers? | ○ Yes ● No |

If yes, give a date.   **Please format the date as MM/DD/YYYY**

| *Question 5 Have you ever discussed your invention with others not employed at IBM? | ○ Yes ● No |

If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.

| *Question 6 Was the invention, in any way, started or developed under a government contract or project? | ○ Yes ● No ○ Not sure |

If Yes, enter the contract number

| *Question 7 Was the invention made in the course of any alliance, joint development or other contract activities? | ○ Yes ● No ○ Not Sure |

| If Yes, enter the following :Name of Alliance, Contractor or Joint Developer |
| Contract ID number |
| Relationship contact name |
| Relationship contact E-mail |
| Relationship contact phone |

| Question 8 Have you submitted, or are you aware of, any related disclosure submission? | ○ Yes ● No |

If Yes, please provide the title and docket or disclosure number below:

Question 9
What type of companies do you expect to compete with inventions of this type? *Check all that apply.*

- ☐ Manufacturers of enterprise servers
- ☐ Manufacturers of entry servers
- ☐ Manufacturers of workstations
- ☐ Manufacturers of PC's
- ☐ Non-computer manufacturers
- ☐ Developers of operating systems
- ☒ Developers of networking software
- ☒ Developers of application software
- ☒ Integrated solution providers
- ☒ Service providers
- ☐ Other (Please specify below)

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evalua·

(The Patent Value tool can be used by you or the evaluation team to determine the potential licensing value of your invention.)

The **Patent Value Tool** has not yet been used to calculate a score.

Post Disclosure Text & Drawings
Enter any additional information relating to this disclosure below:

(Form Revised 12/17/97)